

CLAIMS

We claim:

1. A composition comprising at least one sodium channel blocking compound that specifically binds to a site on an SS1 region or an SS2 region of a sodium channel alpha subunit and a pharmaceutically acceptable carrier comprising an aqueous solution of a weak organic acid and propylene glycol and having a pH ranging from 3.0 to 5.0.
2. The composition of claim 1, wherein the weak organic acid is acetic acid.
3. The composition of claim 1 wherein the at least one sodium channel blocking compound is tetrodotoxin or an analog thereof.
4. The composition of claim 1 wherein the at least one sodium channel blocking compound is saxitoxin or an analog thereof.
5. The composition of claim 2 wherein the analog of tetrodotoxin is anhydrotetrodotoxin, tetrodaminotoxin, methoxytetrodotoxin, ethoxytetrodotoxin, deoxytetrodotoxin or tetrodonic acid.
6. The composition of claim 1 which further comprises at least one auxiliary acidic solvent selected from dilute acetic acid, dilute hydrochloric acid and dilute citric acid.
7. The composition as defined by claim 1 which further comprises at least one pH buffer selected from an acetate buffer, a citrate buffer, a phosphate buffer, a borate buffer.
8. The composition of claim 1 wherein the propylene glycol is present at 10% to 80% by total volume of the solution.
9. The composition of claim 1, wherein the propylene glycol is present at 30 to 50% by total volume of the solution.

10. The composition of claim 2, wherein the propylene glycol is present at 30 to 50% by total volume of the solution.

11. The composition of claim 1 further comprise a vasoconstrictor, an antibiotic, and a steroidal or a non-steroidal anti-inflammatory drug.

12. The composition of claim 1, further comprising a preservative selected from the group consisting of benzalkonium chlorid, chlorobutanol, phenylmercuric acetate and phenyl mercuric nitrate.

13. The composition of claim 1, further comprising a tonicity adjustor selected from the group consisting of sodium chloride, mannitol and glycerine.

14. The composition of claim 1, further comprising a penetration enhancer selected from the group consisting of glycol, oleic acid, and an alkyl amine.

15. A composition comprising at least one sodium channel blocking compound that specifically binds to a site on an SS1 region or an SS2 region of a sodium channel alpha subunit and a pharmaceutically acceptable carrier comprising an aqueous solution of a weak organic acid and having a pH ranging from 3.0 to 5.0.

16. The composition of claim 15, wherein the weak organic acid is acetic acid.

17. The composition of claim 15, wherein the at least one sodium channel blocking compound is tetrodotoxin or an analog thereof.

18. The composition of claim 16, wherein the at least one sodium channel blocking compound is tetrodotoxin or an analog thereof.

19. A composition comprising at least one sodium channel blocking compound that specifically binds to a site on an SS1 region or an SS2 region of a sodium channel

alpha subunit and a pharmaceutically acceptable carrier comprising an aqueous solution of a C₂ to C₆ alkane glycol and having a pH ranging from 3.0 to 5.0.

20. The composition of claim 19, wherein the glycol is propylene glycol.

21. The composition of claim 19, wherein the at least one sodium channel blocking compound is tetrodotoxin or an analog thereof.

22. The composition of claim 20, wherein the at least one sodium channel blocking compound is tetrodotoxin or an analog thereof.